

CALIFORNIA ENERGY COMMISSION
Peak Load Reduction Program
Telemetry and Storage
Orange Cove Irrigation District Project Summary

Located on the east side of the Central San Joaquin Valley, southeast of Fresno, the Orange Cove Irrigation District receives water from the Friant-Kern Canal. The District funded two projects:

- Project 1: Installation of telemetry equipment and land owner load reduction
- Project 2: Construction of a regulating reservoir, installation of additional telemetry on district facilities, and valves on farmer-owned pumps

Project Descriptions:

Project 1: Remote system monitoring, measurement and control components were installed for sections of the water distribution system not currently equipped. The equipment monitored load, flow, and pumping efficiency in real time. Some systems were controlled to respond to critical water levels in their respective reservoirs, and alarms were installed.

The pump activation process was reprogrammed so that the most efficient pumps would run the majority of the operational hours, and the least efficient pumps would run the least.

A landowner load reduction program was also instituted. Individual growers signed up with the District, committing to a kilowatt reduction during the peak period. In return, the District reduced the price of water for the growers.

Project 2: This was an expansion of Project 1, completing much the same type of work on different areas of the district's distribution system. Farmer-owned pumps were equipped with clock timers, flow control valves, and time-of-use meters to turn the pumps off before 12:00 p.m. and on after 6:00 p.m. A regulating reservoir was constructed and telemetry equipment installed, reducing the peak load due to management practices and increased water storage.

Project Results:

Time-of-use meters were used to verify the peak load reduction. For Project 1, the peak period electrical use of the 2002 season was compared with that of the 2000 season.

Telemetry Control System



Flow Meter



For Project 2, the peak period electrical use of the 2002 season was compared with that of the 2000 season.

PROJECT 1		PROJECT 2	
Total Project Cost	\$283,485	Total Project Cost	\$79,678
Total Grant Award	\$180,000	Total Grant Award	\$44,500
Actual Kilowatt Reduction	600	Actual Kilowatt Reduction	178
Grant Payment per Kilowatt Reduction	\$300	Grant Payment per Kilowatt Reduction	\$300

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